

In the Claims:

1. (Previously Presented) An assay for detecting an effect a compound has on a membrane receptor, comprising the steps of:

a) adding the compound to a cell expressing a membrane receptor/reporter fusion protein, the fusion protein comprising a membrane receptor segment and a reporter segment; and

b) detecting any change of said receptor/reporter fusion protein by detecting a signal from the reporter segment; wherein the membrane receptor segment is a constitutively active mutant receptor.

2. (Original) The assay according to claim 1 wherein said assay is used to screen compounds for their effect on membrane receptors.

3. – 4. (Cancelled)

5. (Previously Presented) The assay according to claim 2 wherein any change is detected as an increase in activity of the reporter segment of the fusion protein.

6. (Previously Presented) The assay according to claim 1 wherein said assay is used to identify compounds that disrupt normal membrane receptor interactions.

7. (Previously Presented) The assay according to claim 1 for detecting a compound which serves as an inverse agonist, antagonist or agonist of the membrane receptor.

8. (Previously Presented) The assay according to claim 7 wherein said inverse agonist, antagonist or agonist of the membrane receptor is used in the study of receptor function.

9. (Previously Presented) The assay according to claim 1 wherein said membrane receptor is a G-protein coupled receptor.

10. – 11. (Cancelled)

12. (Previously Presented) The assay according to claim 1 wherein the membrane receptor/reporter fusion protein is initially unstable, such that the reporter activity is detected at a basal level and wherein after binding of a compound to the receptor segment of the fusion protein, the fusion protein is stabilized and an increase in reporter activity is observed.

13. (Previously Presented) The assay according to claim 9 wherein said G-protein coupled receptor is a serotonin receptor.

14. (Currently Amended) The assay according to claim 1 wherein the receptor/reporter fusion protein is expressed from nucleic acid construct comprising a gene encoding said reporter ~~protein~~ segment which is fused in-frame to the 5' or 3' end of a gene encoding said membrane receptor segment.

15. (Previously Presented) The assay according to claim 1 wherein the functionality of said membrane receptor segment is substantially unaffected by fusion of the reporter segment to the membrane receptor segment.

16. (Previously Presented) The assay according to claim 15 wherein said reporter segment is Green Fluorescent Protein (GFP), or active variant thereof.

17. (Previously Presented) The assay according to claim 16 wherein light emitted by said GFP protein is detected by fluorimetry, FACS, or microscopy techniques.

18. (Previously Presented) The assay according to claim 15 wherein said reporter segment is *Renilla reniformis* (sea pansy) luciferase protein.

19. (Previously Presented) The assay according to claim 18 wherein said reporter segment is luciferase which is detected in a microplate luminometer or using a CCD imaging system.

20. (Previously Presented) The assay according to claim 1 wherein the signal from said reporter segment is used to localize and/or quantify the membrane receptor segment.

21. (Previously Presented) An assay according to claim 20 wherein any change of said membrane receptor/reporter fusion protein is detected as a change in cellular localisation of the receptor/reporter fusion protein, or semi-quantitatively by the synthesis or degradation of said membrane receptor/reporter fusion protein.

22. (Previously Presented) An assay according to claim 1 wherein said detection of any change of said membrane receptor/reporter fusion protein is carried out with cells placed on the surface of a microscope slide.

23. (Previously Presented) The assay according to claim 1 wherein said detection of any change of said membrane receptor/reporter fusion protein is carried out on cells placed in a well of a microtitre plate.

24. (Currently Amended) An assay for detecting a test compound which ~~ahs~~ has an effect on a membrane receptor, comprising the steps of

- a) expressing a membrane receptor/reporter fusion protein in a cell, wherein the fusion protein comprises a membrane receptor segment and a reporter segment, and wherein the membrane receptor segment is a constitutively active mutant receptor;
- b) detecting a basal level of reporter activity;
- c) adding a test compound to the cell; and
- d) detecting a resulting activity of the reporter segment, wherein alteration of reporter activity with respect to the basal level is due to the test compound having an effect on the membrane receptor segment.

25. (Cancelled)

26. (Previously Presented) The assay according to claim 24 wherein the alteration is an increase in reporter activity.

27. (Withdrawn) A membrane receptor/reporter fusion protein comprising a constitutively active mutant receptor which has a reporter added in-frame at the C-terminal.

28. (Withdrawn) The membrane receptor/reporter fusion protein according to claim 27 wherein the constitutively active mutant receptor is a GPCR.

29. (Withdrawn) The membrane receptor/reporter fusion protein according to claim 28 wherein the reporter protein is luciferase.

30. – 31. (Cancelled)

32. (Withdrawn) The membrane receptor/reporter fusion protein according to claim 27 wherein the reporter protein is GFP or luciferase.